

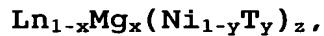
What is claimed is:

1. A nickel-hydrogen secondary battery comprising a positive electrode and a negative electrode opposite each other with a separator between, and contained in a container with an alkaline electrolyte;

wherein the positive electrode contains nickel hydroxide, and at least one element selected from a group consisting of Y, Yb, Er, Ca, Sr, Ba, Nb, Ti, W, Mo and Ta;

10 and

wherein the negative electrode contains a hydrogen-absorbing alloy having composition represented by a general formula



15 where Ln is at least one element selected from a group consisting of the lanthanoids, Ca, Sr, Sc, Y, Ti, Zr and Hf, T is at least one element selected from a group consisting of V, Nb, Ta, Cr, Mo, Mn, Fe, Co, Al, Ga, Zn, Sn, In, Cu, Si, P and B, and x, y and z are numerical values satisfying 20 the requirements $0 < x < 1$, $0 \leq y \leq 0.5$, and $2.5 \leq z \leq 4.5$, respectively.

2. The nickel-hydrogen secondary battery according to claim 1, wherein the surface of the nickel hydroxide is coated with a cobalt compound.

25 3. The nickel-hydrogen secondary battery according to claim 2, wherein the cobalt compound is a higher-order cobalt compound which has distorted crystal structure and contains alkali cations.

30 4. The nickel-hydrogen secondary battery according to claim 3, wherein the average valency of nickel contained in the nickel hydroxide is higher than 2.

5. The nickel-hydrogen secondary battery according to claim 4, wherein the average valency of nickel contained in

the nickel hydroxide is in the range of 2.05 to 2.30.

6. The nickel-hydrogen secondary battery according to claim 5, wherein the average valency of nickel contained in the nickel hydroxide is in the range of 2.10 to 2.30.

5 7. The nickel-hydrogen secondary battery according to any of claims 1 to 6, wherein the nickel hydroxide contains Co and Zn in a form of a solid solution.

8. The nickel-hydrogen secondary battery according to claim 7, wherein the positive electrode contains at least 10 one compound selected from a group consisting of Y_2O_3 , Nb_2O_5 , Yb_2O_3 , Er_2O_3 , $Ca(OH)_2$, SrO , $Ba(OH)_2$, TiO_2 , WO_2 , WO_3 , MoO_2 , MoO_3 and Ta_2O_5 .

9. The nickel-hydrogen secondary battery according to claim 8, wherein the positive electrode contains Y_2O_3 .

15 10. The nickel-hydrogen secondary battery according to claim 9, wherein the hydrogen-absorbing alloy contains La, Nd, Pr, Co and Al.